

23 22 23 " 35 22 35

FIG. 1
(PRIOR ART)

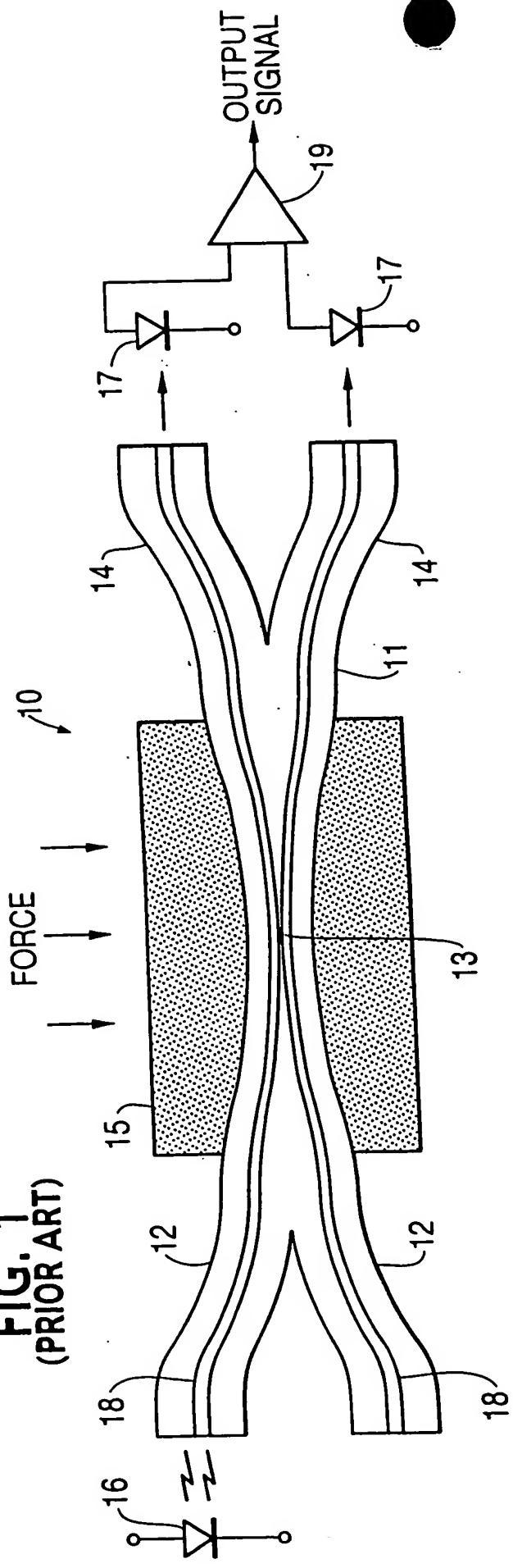


FIG. 2

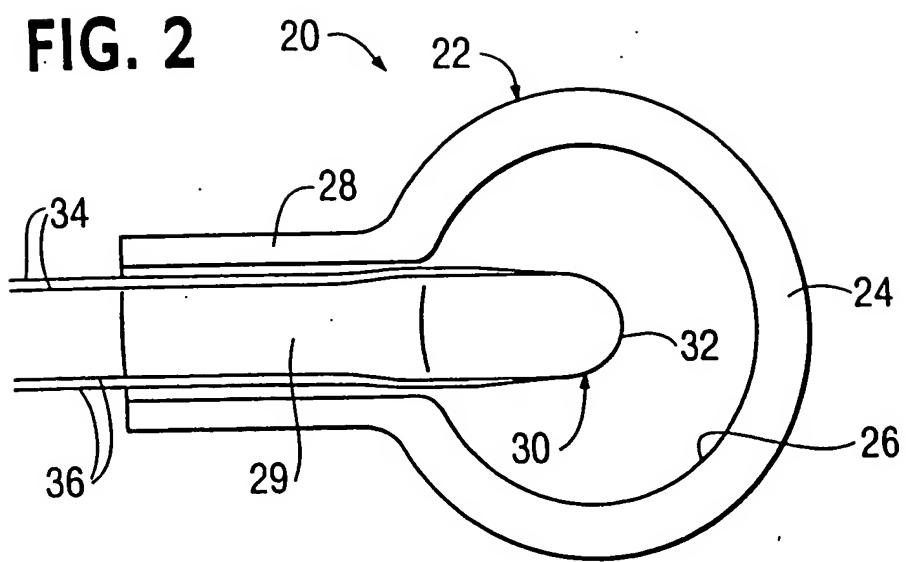


FIG. 3

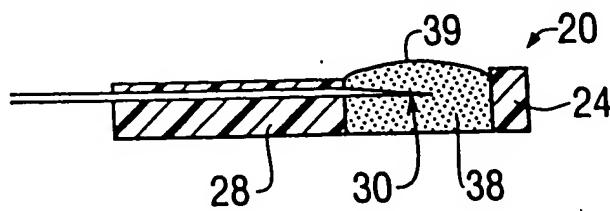


FIG. 4

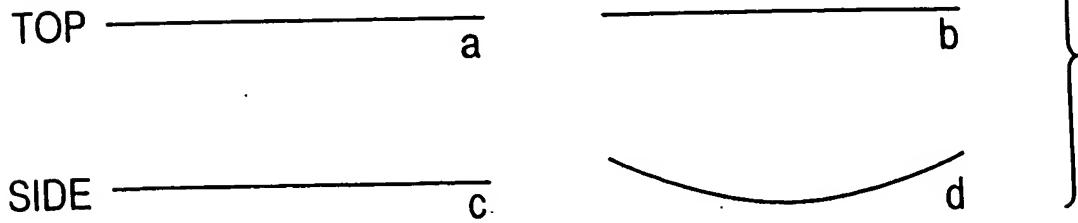


FIG. 5

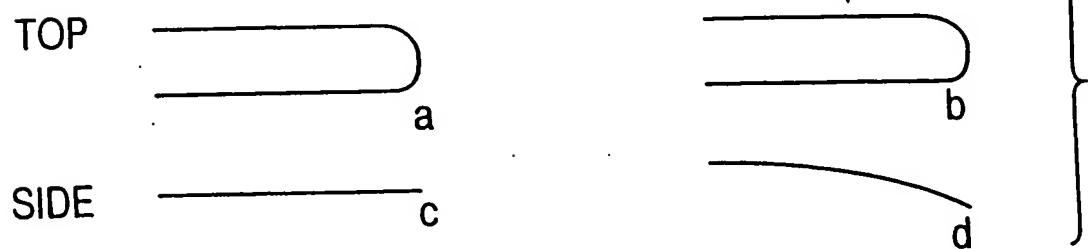


FIG. 6

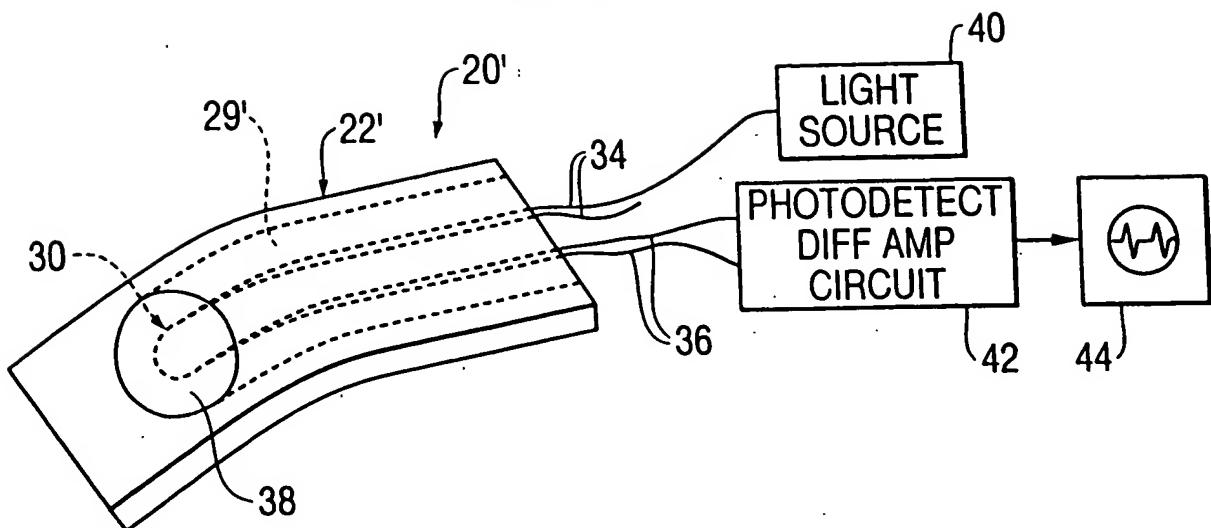


FIG. 7

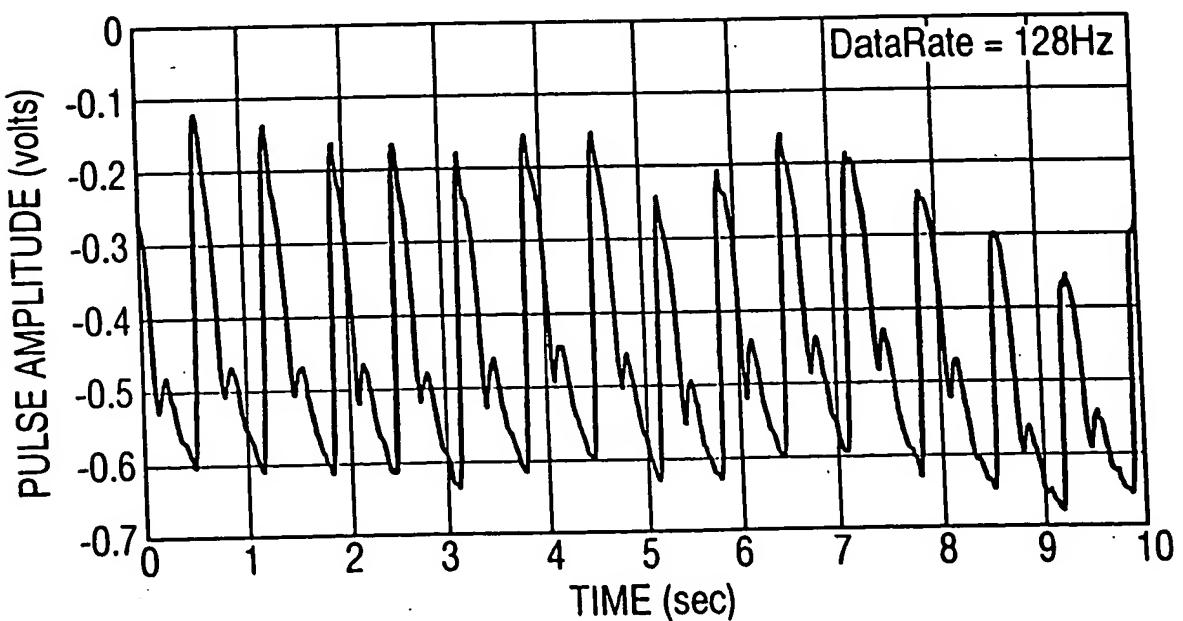


FIG. 8

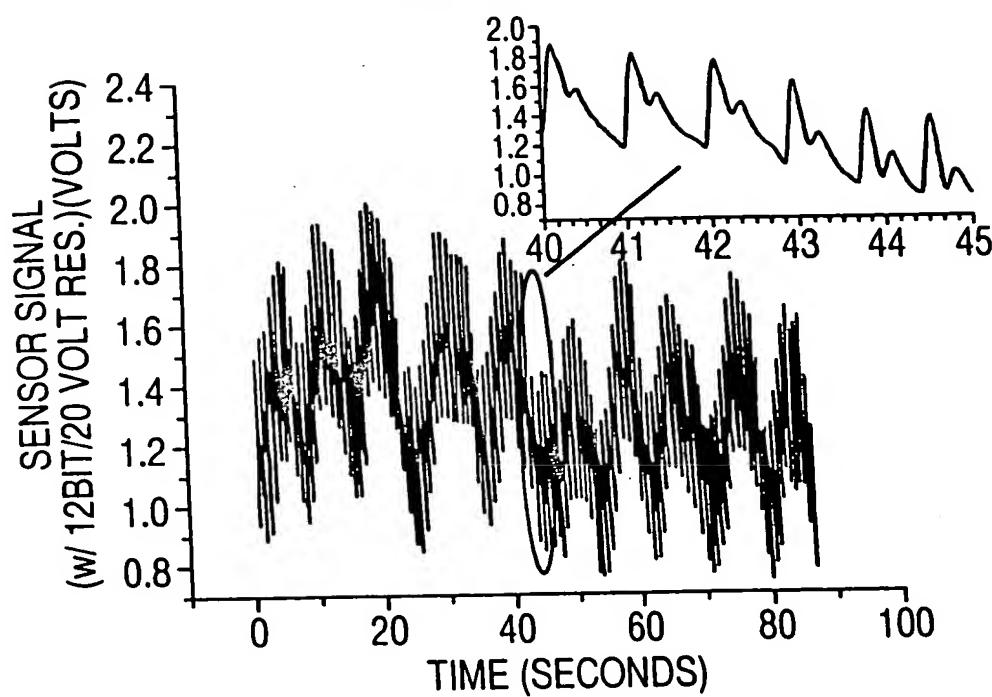


FIG. 11

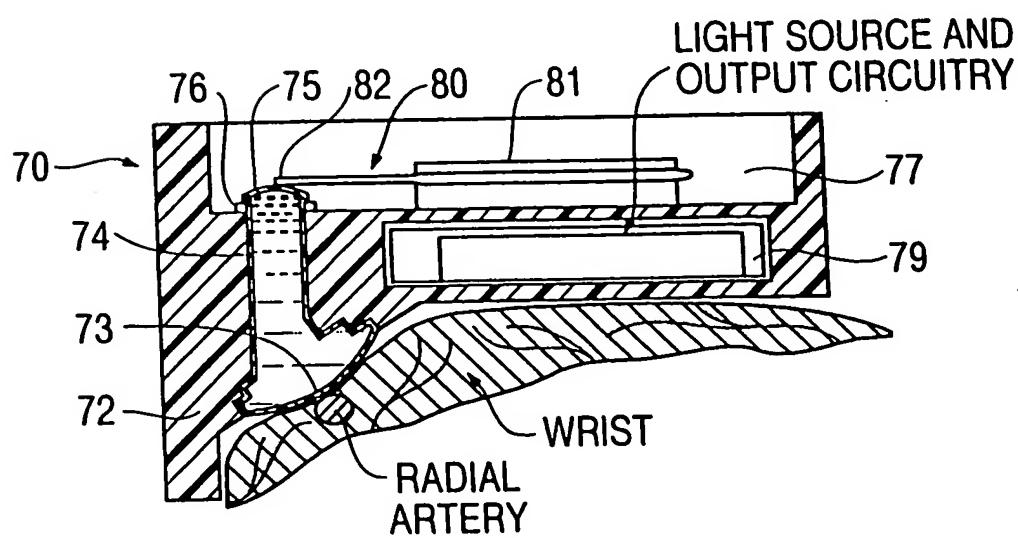


FIG. 9

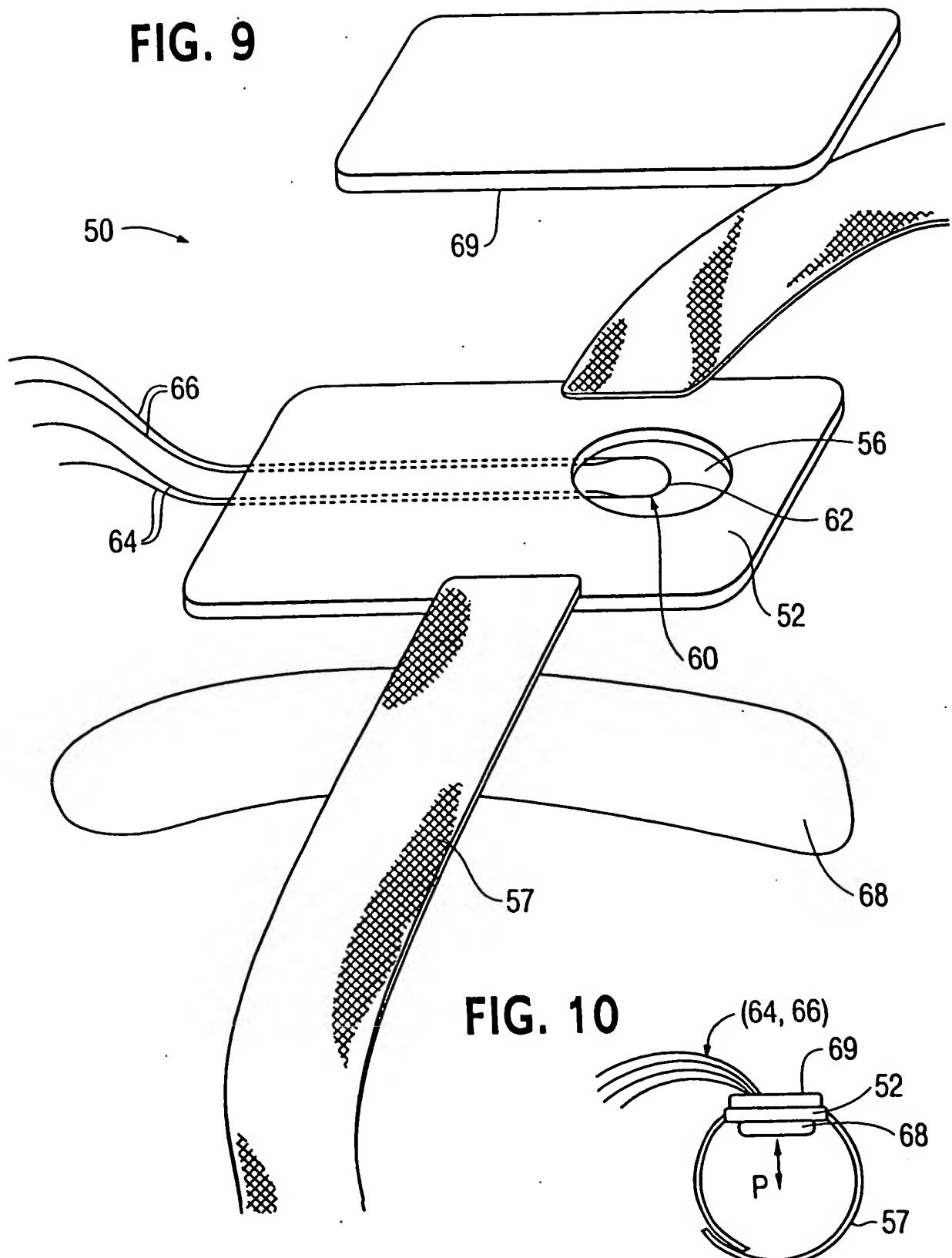


FIG. 10

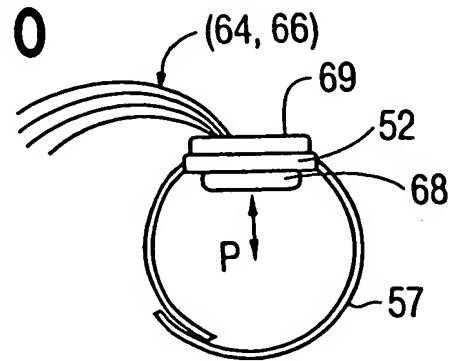
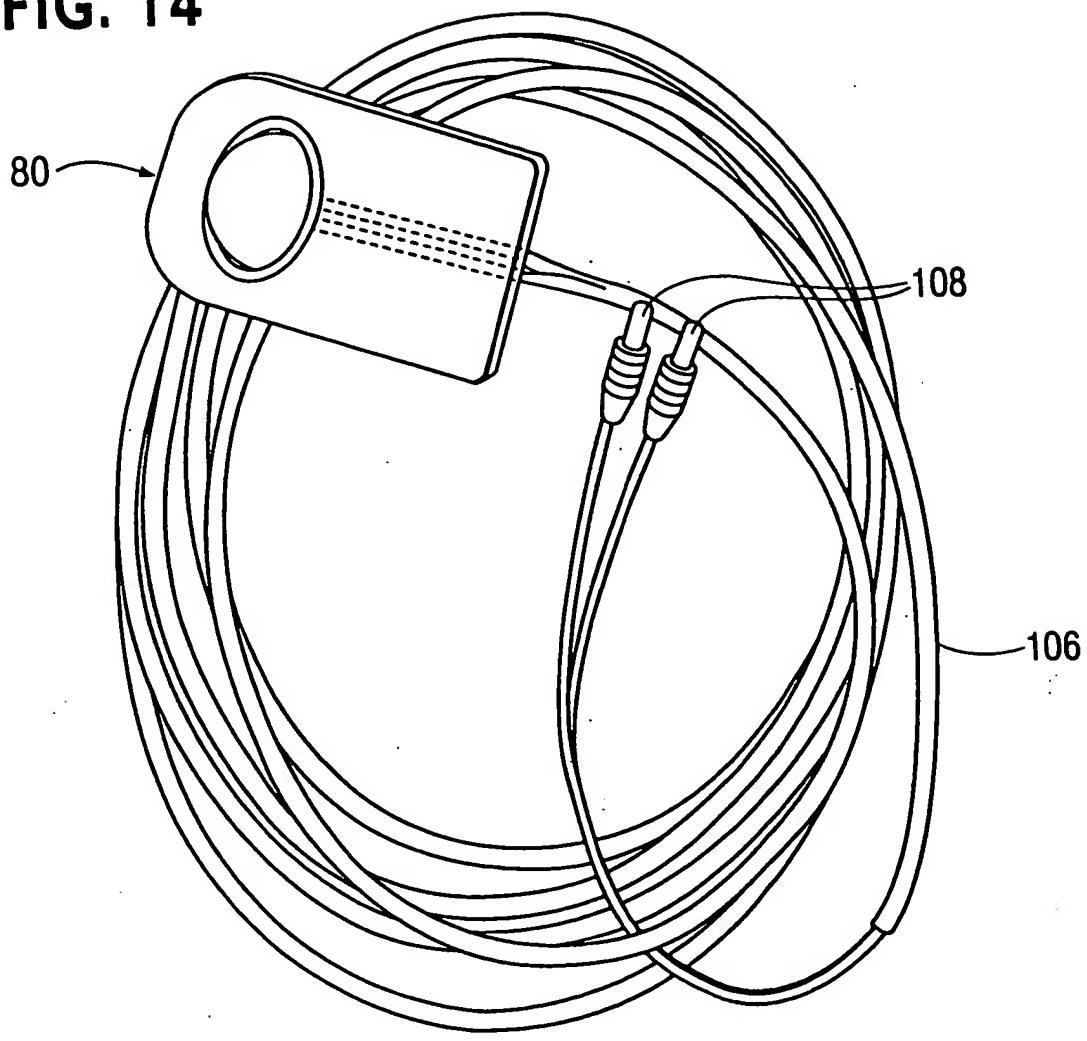


FIG. 14



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FIG. 12

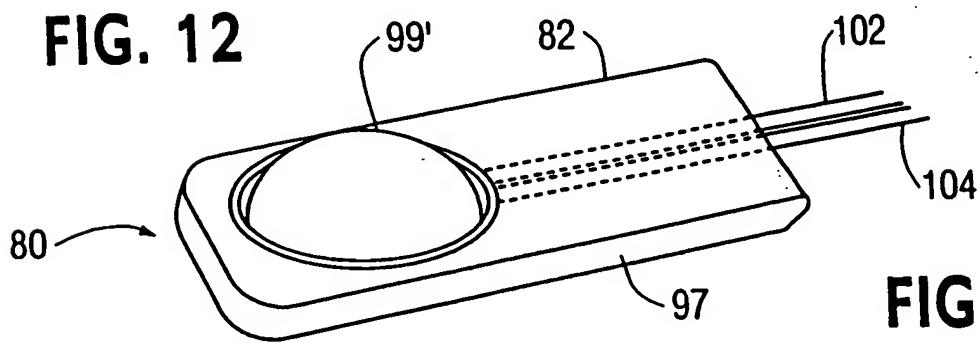
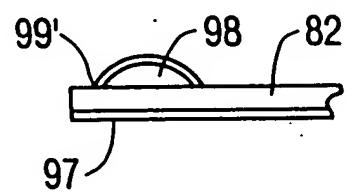


FIG. 13



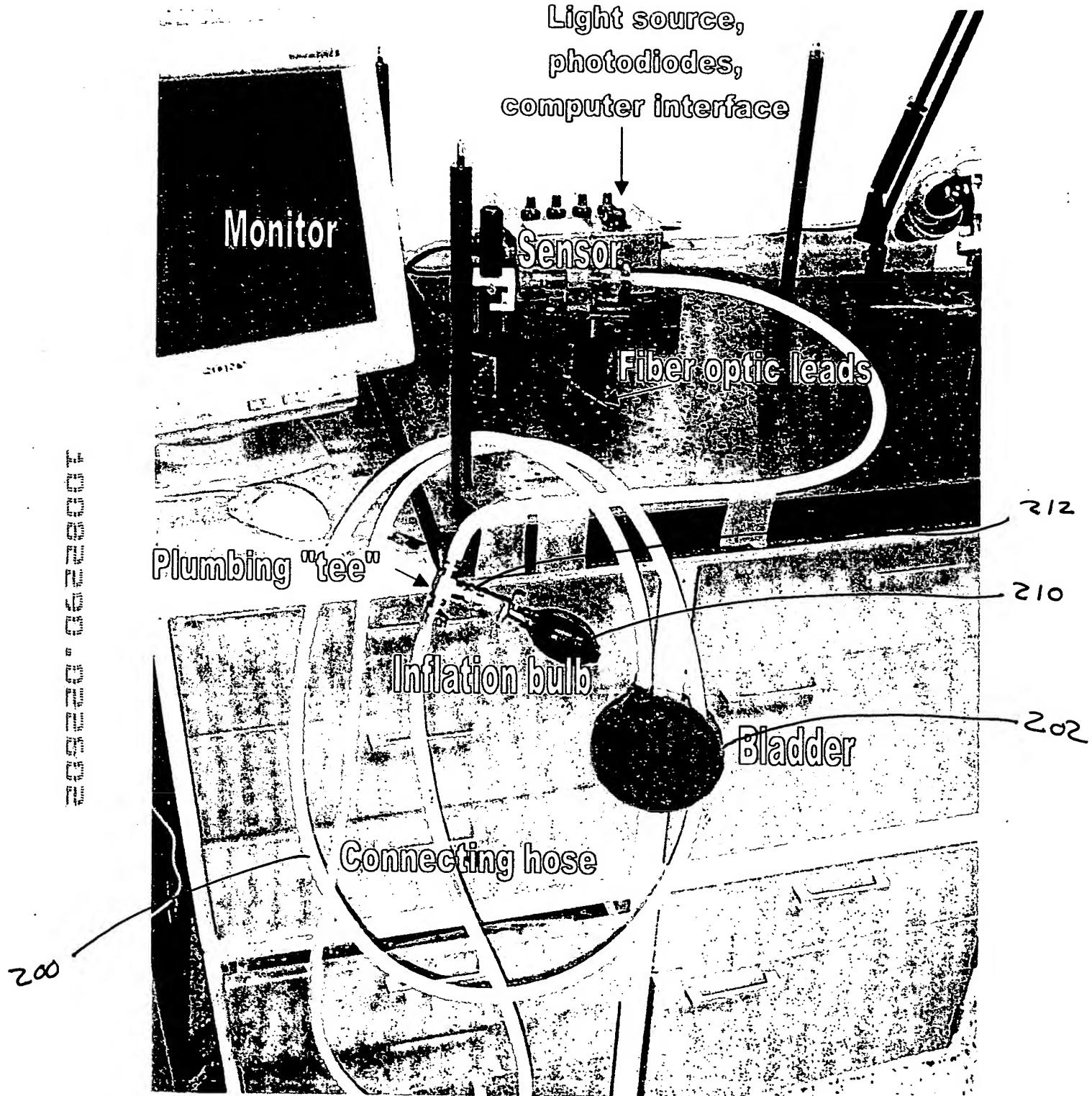


Figure 15 Complete system showing component parts

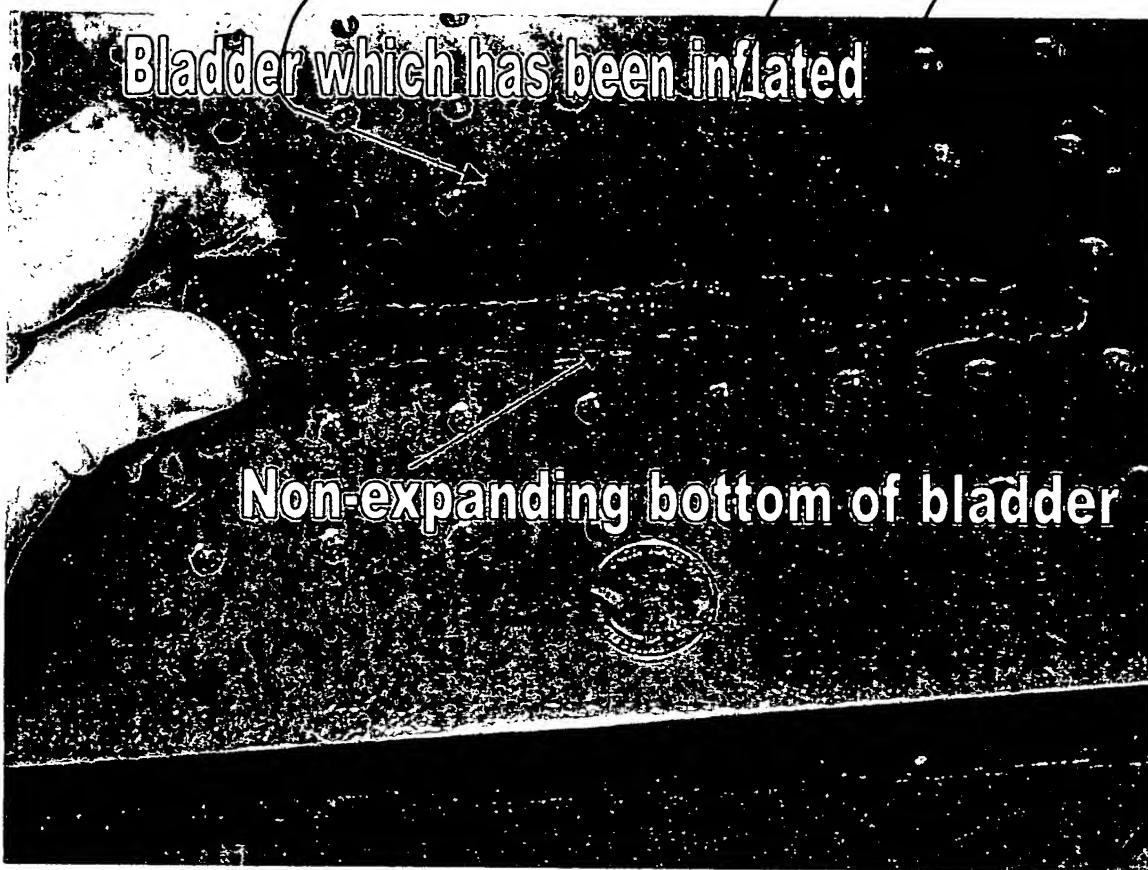


Figure 16 Side view of bladder

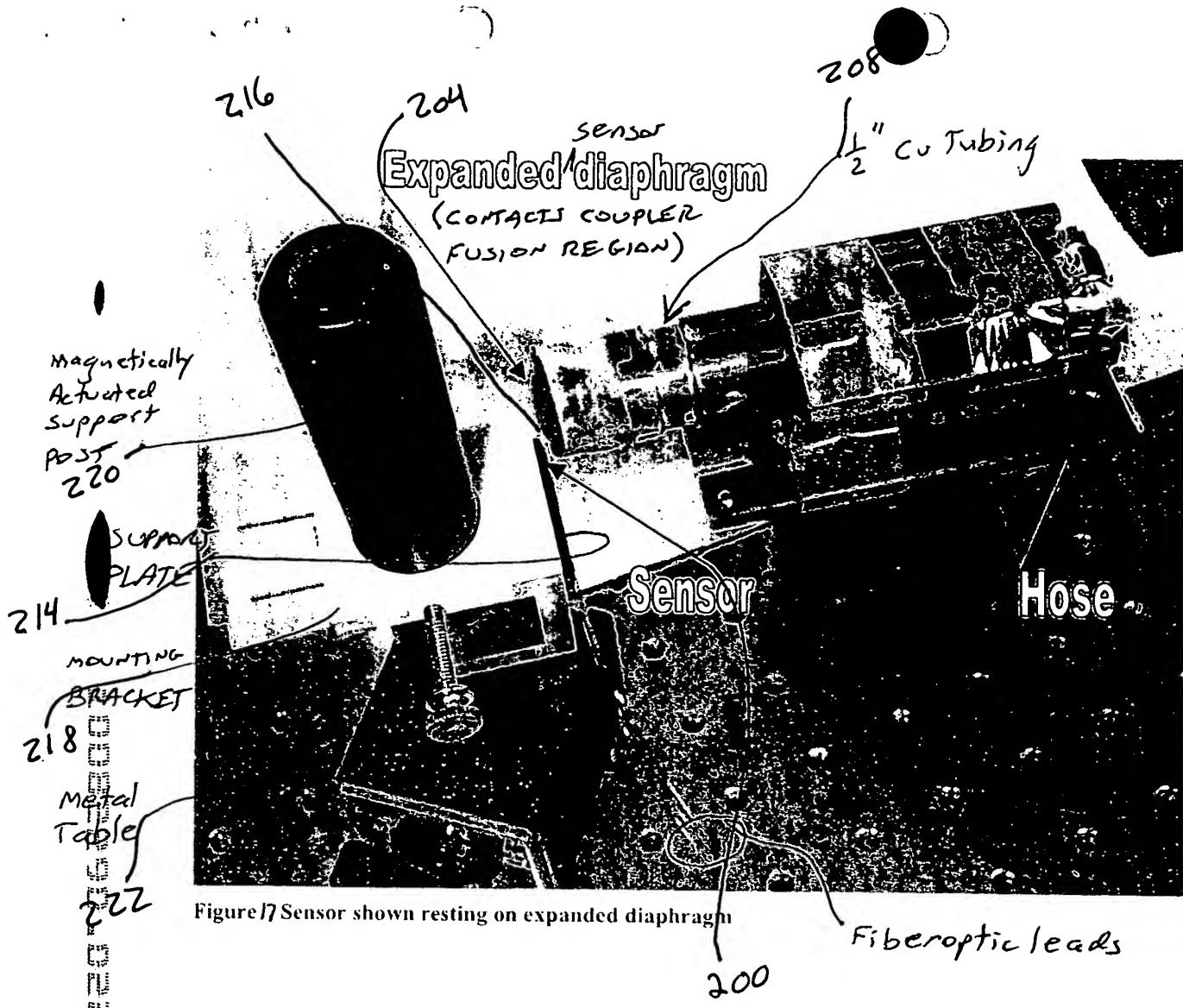


Figure 17 Sensor shown resting on expanded diaphragm

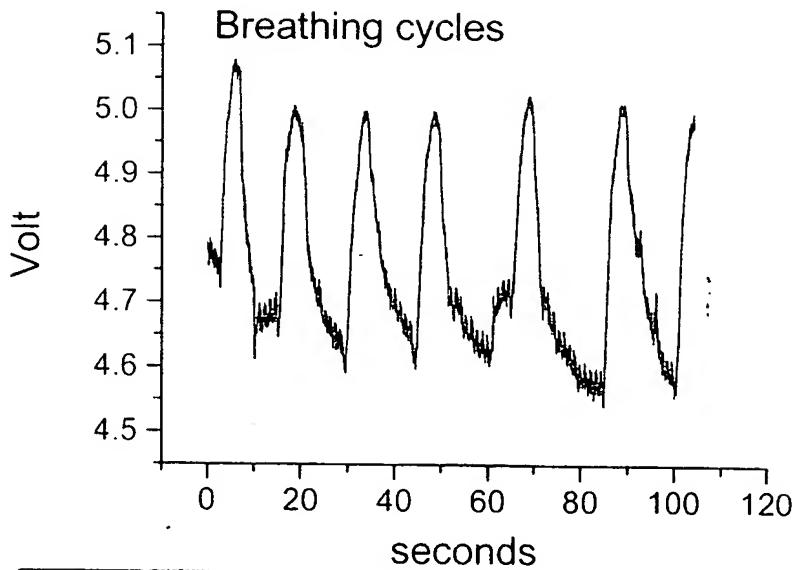


Figure 19 Heartbeat cycles showing regular breathing

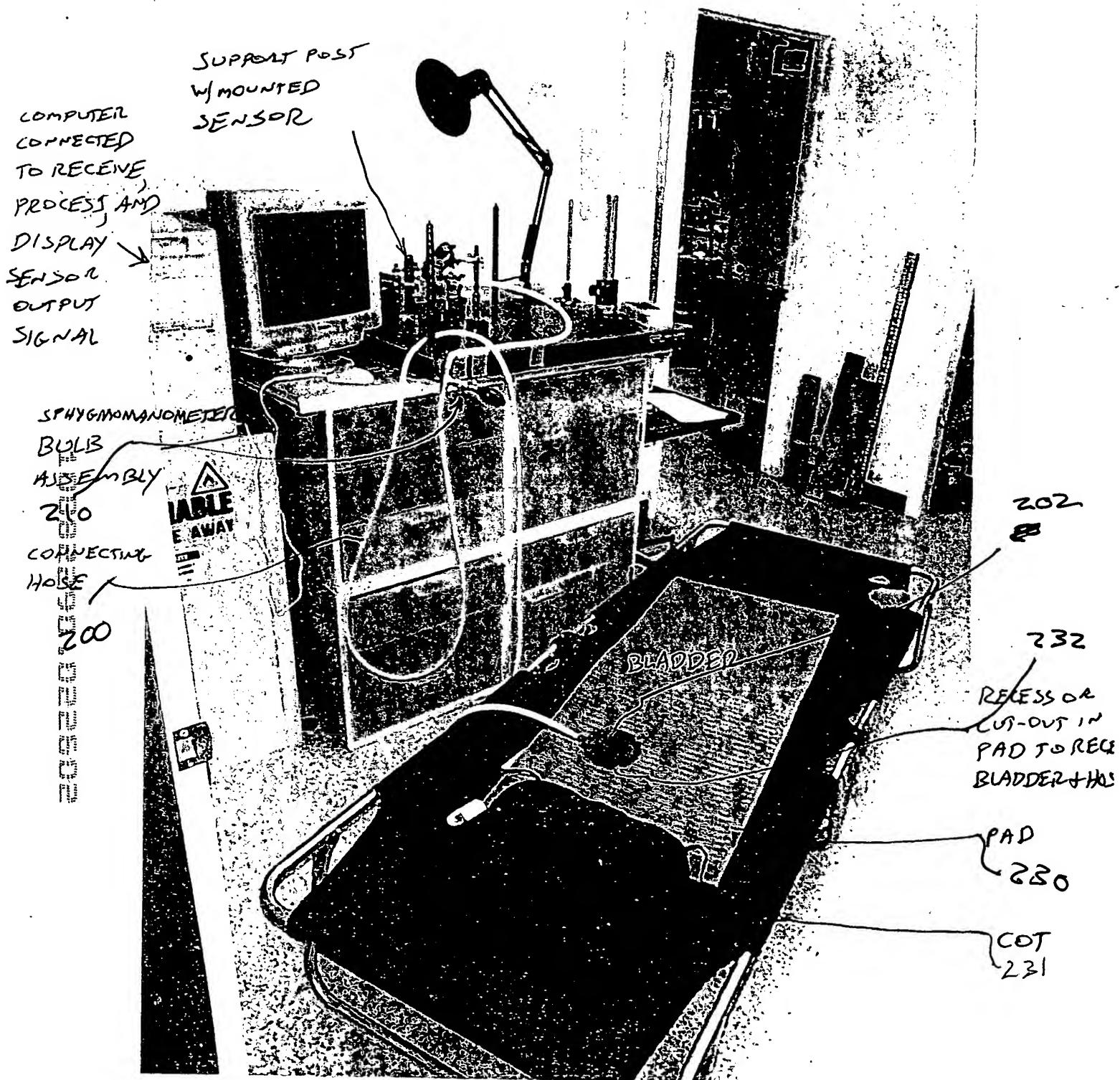


Figure 18 View of cot and bladder

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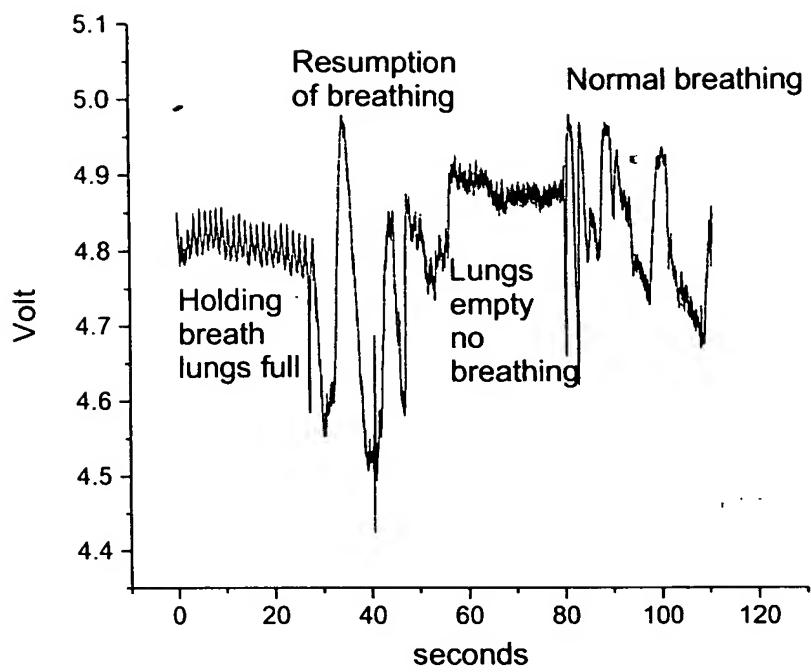


Figure 20 Various breathing patterns

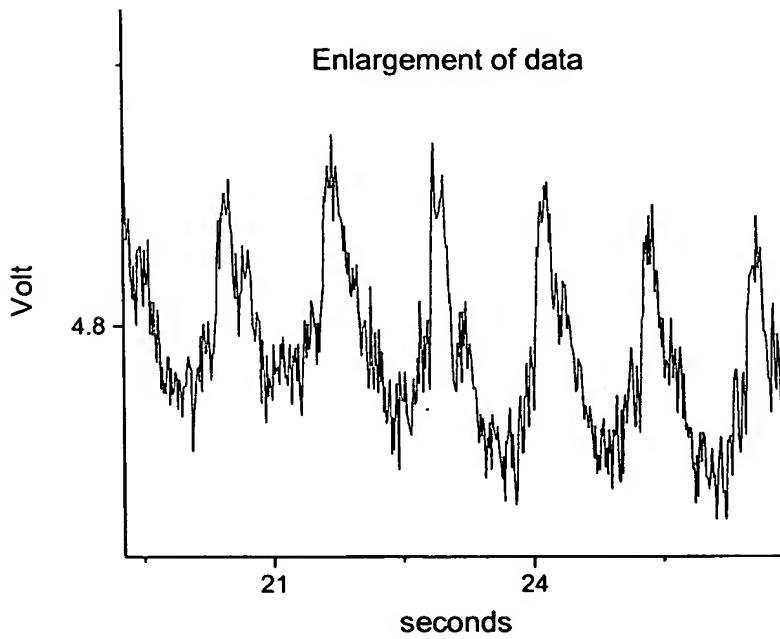


Figure 21 Heartbeat pattern showing through data in figure 20. Time scales correspond.

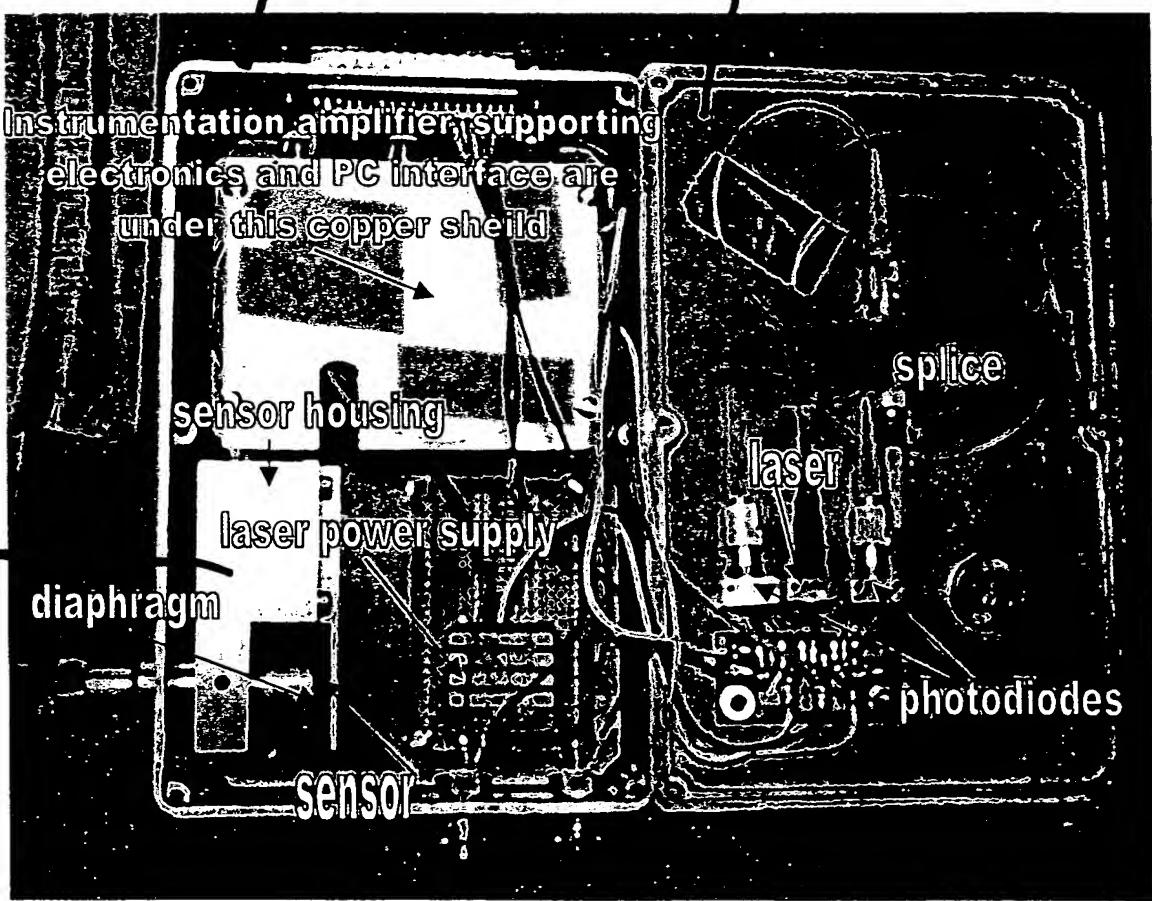
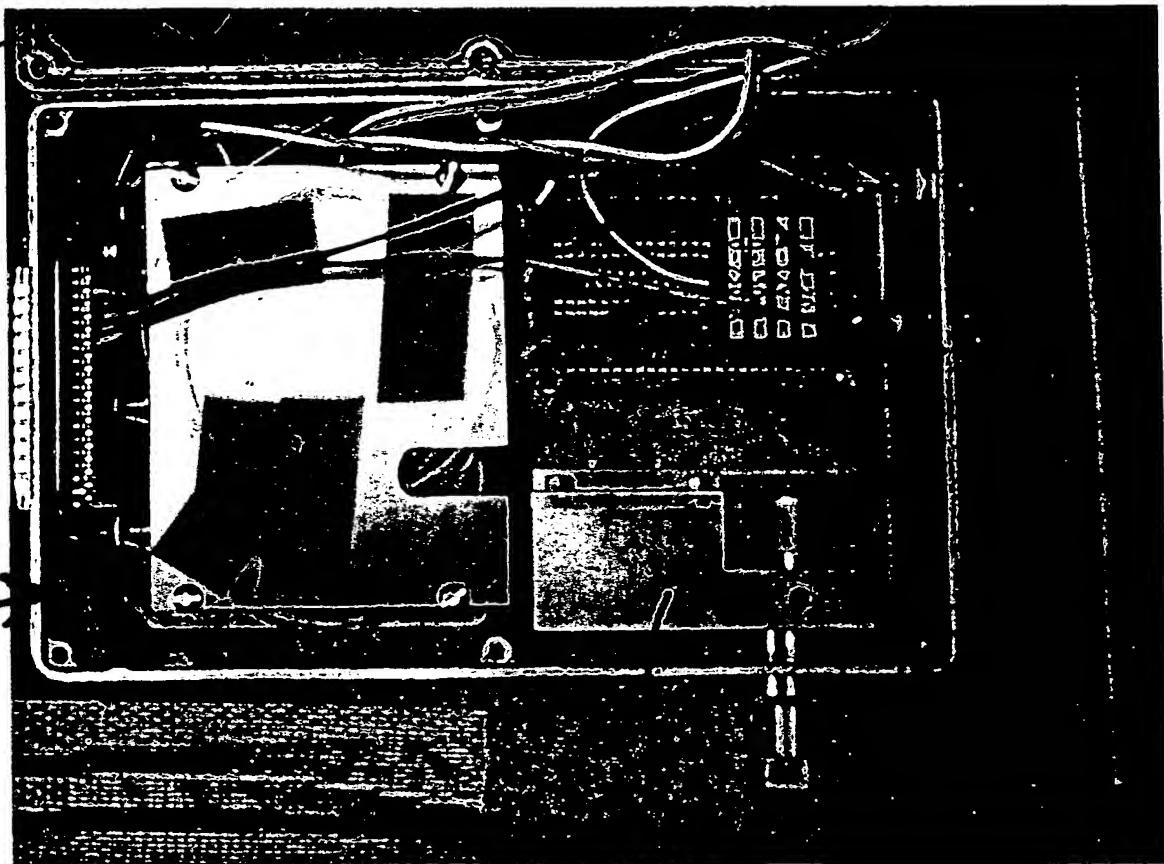


Figure 22The system box including mounted sensor, laser, photodiodes, instrumentation amplifier, and computer interface

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Figure 23 Close up view of box shown in figure 22.

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Mechanical stop to prevent over stressing of the sensor due to excessive inflation of the diaphragm

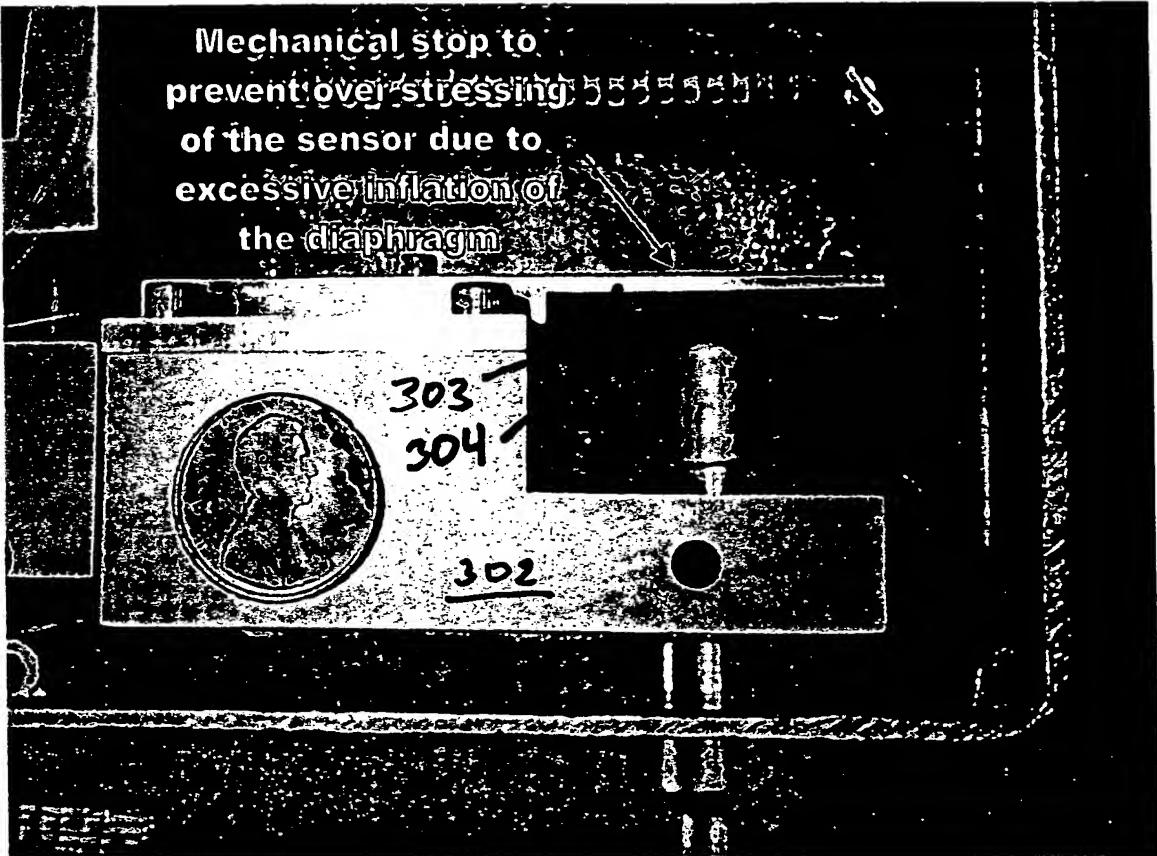


Figure 24 Mounted sensor and diaphragm

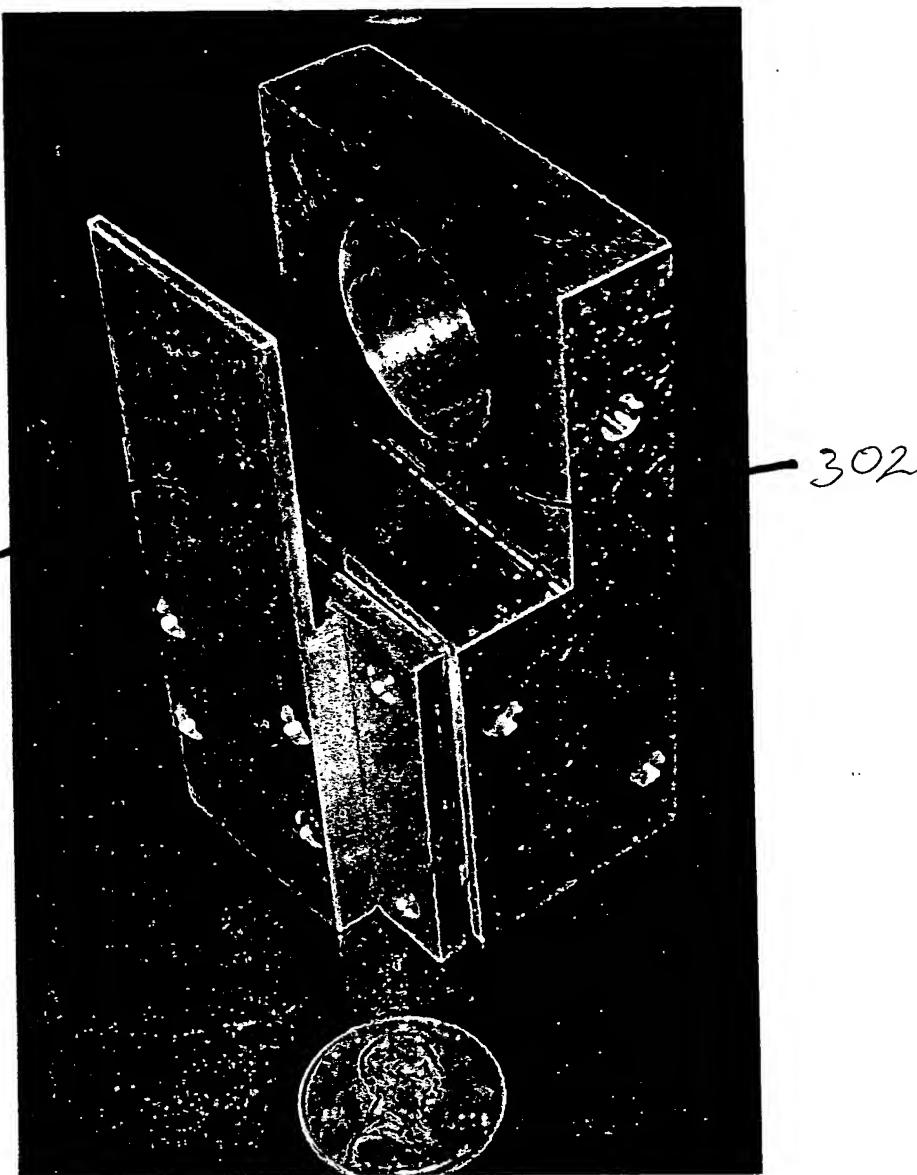


Figure 25 Sensor mount